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11/22/2004

GEMFIRE CORPORATION 2471 EAST BAYSHORE ROAD SUITE 600 PALO ALTO, CA 94303

EXAMINER	
	

PALMER, PHAN T H

ART UNIT PAPER NUMBER

2874

DATE MAILED: 11/22/2004

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/073.763	02/11/2002	Markus P. Hehlen	56	4505

TITLE OF INVENTION: INTEGRATED OPTICAL ISOLATOR ARRAY

APPLN. TYPE	SMALL ENTITY	ISSUE FEE	PUBLICATION FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	YES	\$685	\$0	\$685	02/22/2005

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE REFLECTS A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE APPLIED IN THIS APPLICATION. THE PTOL-85B (OR AN EQUIVALENT) MUST BE RETURNED WITHIN THIS PERIOD EVEN IF NO FEE IS DUE OR THE APPLICATION WILL BE REGARDED AS ABANDONED.

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B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

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B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION EEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL should be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). Even if the fee(s) have already been paid, Part B - Fee(s) Transmittal should be completed and returned. If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

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Complete and send this form, together with applicable fee(s), to: Mail

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maintenance fee notifications. CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address) Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission. 7590 11/22/2004 26485 Certificate of Mailing or Transmission

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I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (703) 746-4000, on the date indicated below.

(Depositor's name)	•
(Signature)	
(Date)	

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10/073,763	02/11/2002	Markus P. Hehlen	56	4505

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nonprovisional	YES	\$685		\$0	\$685	02/22/2005	
EXAMINER		ART UNI	Т	CLASS-SUBCLASS]		
PALMER,	PHAN T H	2874	-	385-014000	•		
CFR 1.363). Change of correspond Address form PTO/SB/1. "Fee Address" indicate PTO/SB/47; Rev 03-02 Number is required. 3. ASSIGNEE NAME AND	dence address (or Change of C 22) attached. tion (or "Fee Address" Indicat or more recent) attached. Use	correspondence ion form of a Customer PRINTED ON TI	(1) the na or agents (2) the na registered 2 registered listed, no	mes of up to 3 registered pater OR, alternatively, me of a single firm (having as attorney or agent) and the naned patent attorneys or agents. If name will be printed. T (print or type) Dear on the patent. If an assignment of the patent.	a member a 2anes of up to no name is 3	document has been filed for	
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4a. The following fee(s) are	enclosed:		Payment of	` '			
Issue Fee			A check in the amount of the fee(s) is enclosed.				
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Advance Order - # o	f Copies		The Director is hereby authorized by charge the required fee(s), or credit any overpaymen Deposit Account Number (enclose an extra copy of this form).				
a. Applicant claims S	(from status indicated above) MALL ENTITY status. See 3 is requested to apply the Issue of the status. See 3	7 CFR 1.27.	🗖 b. Appli	cant is no longer claiming SMA ny) or to re-apply any previous e other than the applicant; a reg	LL ENTITY status. See 37 C	CFR 1.27(g)(2).	
interest as shown by the reco	ords of the United States Pater	nt and Trademark (Office.			maniferent or amer karry w	
Authorized Signature				Date			
Typed or printed name _				_ Registration	1 No		

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

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10/073,763	0	02/11/2002	Markus P. Hehlen	56	4505
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GEMFIRE CC			•	PALMER,	PHAN T H
2471 EAST BA SUITE 600	YSHORE	ROAD		ART UNIT	PAPER NUMBER
PALO ALTO, O	CA 94303			2874	
				DATE MAILED: 11/22/200	4

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)

(application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 340 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 340 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (http://pair.uspto.gov).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (703) 305-1383. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at (703) 305-8283.

N	Application No.	Applicant(s)	
	10/073,763	HEHLEN ET AL.	
Notice of Allowability	Examiner	Art Unit	,
	PHAN T.H. PALMER	2874	6Km
The MAILING DATE of this communication appear All claims being allowable, PROSECUTION ON THE MERITS IS (herewith (or previously mailed), a Notice of Allowance (PTOL-85) of NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIC of the Office or upon petition by the applicant. See 37 CFR 1.313	OR REMAINS) CLOSED in this apport of the communication of the communication of the communication is subject to the communicati	plication. If not include will be mailed in due	course. THIS
1. This communication is responsive to <u>02/11/2002</u> .			
2. The allowed claim(s) is/are 1-30.			
3. The drawings filed on 11 February 2002 are accepted by the	e Examiner.		
4. Acknowledgment is made of a claim for foreign priority unit a) All b) Some* c) None of the: 1. Certified copies of the priority documents have 2. Certified copies of the priority documents have 3. Copies of the certified copies of the priority documents have 3. Copies of the certified copies of the priority documents have 3. Copies of the certified copies of the priority documents have 3. Copies of the certified copies of the priority documents have 3. Copies of the certified copies of the priority documents have 3. Copies of the priority documents have 3. Copies of the priority documents have 4. Certified copies not received: Applicant has THREE MONTHS FROM THE "MAILING DATE" of noted below. Failure to timely comply will result in ABANDONM THIS THREE-MONTH PERIOD IS NOT EXTENDABLE. 5. A SUBSTITUTE OATH OR DECLARATION must be submit INFORMAL PATENT APPLICATION (PTO-152) which give of including changes required by the Notice of Draftspers (a) including changes required by the Notice of Draftspers 1) hereto or 2) to Paper No./Mail Date (b) including changes required by the attached Examiner's Paper No./Mail Date Identifying indicia such as the application number (see 37 CFR 1. each sheet. Replacement sheet(s) should be labeled as such in the deposit of the priority documents and the deposit of the deposit of the priority documents and the deposit of the priority documents are completed as such in the deposit of the priority documents are completed as such in the deposit of the priority documents are completed as such in the deposit of the priority documents are completed as such in the deposit of the priority documents are completed as such in the deposit of the priority documents are completed as such in the deposit of the priority documents are completed as such in the deposit of the priority documents are completed as such as the application number (see 37 CFR 1. each sheet. Replacement sheet(s) should be labeled as such as the application number (see 37 CFR 1. each sheet. Replacement sheet	been received in Application No currents have been received in this of this communication to file a reply ENT of this application. itted. Note the attached EXAMINER es reason(s) why the oath or declaration it be submitted. ion's Patent Drawing Review (PTO is Amendment / Comment or in the (1.24(c)) should be written on the drawing he header according to 37 CFR 1.121(1.31) sit of BIOLOGICAL MATERIAL	complying with the reason is deficient. Office action of the front (not the ld). must be submitted.	quirements NOTICE OF
Attachment(s) 1. ☑ Notice of References Cited (PTO-892) 2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948) 3. ☑ Information Disclosure Statements (PTO-1449 or PTO/SB/0 Paper No./Mail Date	5. ☐ Notice of Informal formal forma	r (PTO-413), ate ment/Comment	·

Application/Control Number: 10/073,763

Art Unit: 2874

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EXAMINER'S AMENDMENT Amott A PTHP

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

The application has been amended as follows:

- In page 1 of the specification, on line 3, after "U.S. Application No."
- insert --10/073,814, now is U.S. Patent number 6,580,842-; and on line 5, after "U.S. Application No." insert --10/073,754, now is U.S. Patent number 6,560,387-.
- In the "ABSTRACT OF THE INVENTION", rewrite as following:

 ABSTRACT OF THE INVENTION

-An integrated isolator array is provided having a plurality of waveguides fabricated in a planar optical substrate, each waveguide having input and output sections. An isolator subassembly is received within a transverse trench formed in the substrate between the input and output sections such that it intersects the optical paths of the waveguides. The isolator subassembly, which may consist of layers of Faraday rotator material sandwiched between layers of birefringent crystal material, permits the forward passage of light from the input sections to the output sections of the waveguides while preventing the backward passage of light from the output section is

Page 3

Application/Control Number: 10/073,763

Art Unit: 2874

preferably adapted with a mode-expanding input taper to collimate light propagating through the waveguide. Similarly, each output section is preferably adapted with a mode-reducing output taper to reduce the mode size of forward-traveling light to match that of an output fiber, as well as to collimate light traveling backward within the output section--.

REASON FOR ALLOWANCE

- 2. The following is an examiner's statement of reasons for allowance: the claims are allowable over prior art of record, because none of the references in alone or in combination discloses:
 - +++ An integrated optical isolator device, comprising:
 - a planar optical substrate;
- a first waveguide formed in said optical substrate and having an input section and an output section; and
- an isolator element affixed to said optical substrate and positioned in an optical path of said first waveguide between said input section and said output section, said isolator element being configured to allow the passage of forwardly traveling light from said input section to said output section of said first waveguide while inhibiting the passage of backwardly traveling light from said output section to said input section, as discloses in claims 1, and 17.

Art Unit: 2874

The underline limitations is critically, since the integrated optical Isolator device is improved, it is significant reduce the insertion loss, and reduce the cost manufactured in large volumes using automated assembly techniques.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

CONTACT INFORMATION

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to PHAN T.H. PALMER whose telephone number is (571) 272-2354. The examiner can normally be reached on 4/4 OFF MONDAY.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, RODNEY B. BOVERNICK can be reached on (571) 272-2344. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Application/Control Number: 10/073,763

Art Unit: 2874

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

PTHP 03/06/04

> PHANT. H. PALMER PRIMARY EXAMINER

Application/Control No. 10/073,763 Applicant(s)/Patent Under Reexamination HEHLEN ET AL Examiner PHAN T.H. PALMER Applicant(s)/Patent Under Reexamination HEHLEN ET AL Art Unit Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	Α	US-6,560,378 B1	05-2003	Liu et al.	385/11
*	В	US-6,580,842 B1	06-2003	Hehlen et al.	385/11
	С	US-			
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FOREIGN PATENT DOCUMENTS

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NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
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"A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(e).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

U.S. Patent and Trademark Office PTO-892 (Rev. 01-2001)

Notice of References Cited

Part of Paper No. 0304

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Sheet of . 2

Complete If Known			
Application Number	10/073,763		
Filing Date	02/11/2002		
First Named Inventor	Markus P. Hehlen		
Group Art Unit	287V		
Examiner Name	Phan PALMER		
Allomey Docket Number	S6		

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reference considered, whether or not citation is in conformance with MPEP 608. Oraw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number, 2 See ellecthed iGnds of U.S. Patent Documents. 2 Enter Office that issued the document, by the two-letter code (WiPO Standard ST.3). * For Japanese palent documents, the indication of the year of the reign of the Emperor must precede the series number of the patent document. *Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST, 18 if possible. *Applicant is to place a check mark here if English language Translation is attached.

JUN 1 1 2002

Please type a plus sign (*) inside this box — + H Approved for use through 10/31/89. ONB 0651-0031

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Complete if Known Substitute for form 1449B/PTO **Application Number** 10/073,763 INFORMATION DISCLOSURE Filing Date 02/11/2002 STATEMENT BY APPLICANT First Nemed Inventor Markus P. Hehlen Group Art Unit (use as many sheets as necessary) Examiner Name PALMER of Sheet 2 Attorney Docket Number 2

		OTHER PRIOR ARY - NON PATENT LITERATURE DOCUMENTS	,
chiete"	Cite No.1	include name of the author (in CAPITAL LETTERS), the of the article (when appropriate), title of the firm (book, mapszine, journat, sarial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	
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Examiner Phan T. H. Palmer Oate Signature Considered

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Burden Hour Statement. This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Potenta, Washington, DC 20231.

¹ Unique citation designation number. 2 Applicant is to place a check mark here if English language Translation is attached.

